

distance must be made greater still if the building in which the instrument is placed is fitted with a system of iron pipes. Minor galvanometers must use iron shields and artificial fields, while earth indicators and other similar methods of finding the constant of a ballistic galvanometer must be abandoned. Experiments are under way for providing the thinnest shield of soft iron which will serve as complete protection to magnetic instruments under such conditions as just mentioned."

The preliminary meetings of affiliated societies drew off much material which would otherwise have been presented to the chemical and zoological sections.

Prof. Robert T. Hill read to the geological section a paper on "The Volcanic Craters of the United States," in which he said:—"At the present moment, when many of the great volcanoes of the world are in activity, Vesuvius and Etna in Europe, others in the Australian region, and Colima in Mexico, I thought it a good idea to review the many beautiful volcanic craters found in our own land. The great cinder cones of New Mexico, Arizona, California, and Oregon are among the most interesting. The most eastern crater in the United States is Mount Capulin, a vast mountain in New Mexico. This is composed of volcanic cinder, which looks very much like that which comes from a locomotive. It rises 2750 feet above the plain on which it stands. It is twelve miles in circumference at its base. Were it situated in the eastern part of the United States it would be considered one of the greatest objects of natural interest, but in the West, where the phenomena are so abundant, it is hardly noticed and it has not found a place on the maps. In Arizona and New Mexico over 300 old volcanic necks or 'pipes' are found, and there are 20,000 square miles of lava which has flowed from them. The recent earthquakes in California were shown to have been produced by the terrific volcanic disturbances in Western Mexico."

Prof. Hill thinks it probable that the extinct volcanoes in the United States may again become active. The volcanic region has only been known about fifty years, and experts say that appearances indicate eruptions within two hundred years past.

The next meeting of the Association will be held at Madison, Wisconsin, on the third Thursday of August, 1893, unless the date shall be changed by the council.

Cordial invitations from the city government of San Francisco, the California Academy of Science, the University of California, and the new and munificently-endowed Leland Stanford, Jun., University, indicate that a meeting at San Francisco will be arranged for 1895.

THE INTERNATIONAL CONGRESS OF ORIENTALISTS.

THE meetings of the International Congress of Orientalists are being held this week in London, and the proceedings, which are of great interest, have been attracting a good deal of popular attention. The Congress is being attended not only by a large number of British scholars, but by many representatives of other countries, among whom are the following:—Austria-Hungary: Prof. G. Bühler, the Rev. Joseph Dahlmann, Dr. I. Goldziher, Dr. J. Karabacek, Prof. L. Reinisch; Belgium: Dr. Abbeloos; Egypt: Dr. Vollers; France: Prof. J. Darmesteter; Germany: Prof. K. Abel, Prof. R. E. Brünnow, Prof. Geiger, Prof. Hommel, Prof. Hübschmann, Dr. G. Huth, Prof. Kautsch, Prof. Kielhorn, Prof. Leumann; Holland: Prof. J. P. N. Land; Italy: Prof. Ascoli, Dr. Carlo Formichi, Count Angelo de Gubernatis, Dr. Pavolini; Sweden and Norway: Dr. Karl Piehl; United States of America: Prof. Charles Lanman, Mr. W. H. Ward.

At the opening meeting on Monday, Prof. Max Müller delivered his presidential address. After some preliminary observations, in the course of which he expressed the obligations of the Congress to the Duke of York for having consented to act as honorary president, Prof. Müller spoke of the splendid service which has been rendered by Oriental scholarship in proving that in prehistoric times language formed a bond of union between the ancestors of many of the Eastern and Western nations, and that in historic times also, language, which seemed to separate the great nations of antiquity, never separated the most important among them so completely as to make all intellectual commerce and exchange between them impossible. These two discoveries seemed to him to form the highest glory of Oriental scholarship

during the present century. It was often supposed that students of Oriental languages and of the science of language dealt with words only. Even now, when scholars spoke of languages and families of languages, they often forgot that languages meant speakers of languages, and that families of speech presupposed real families, or classes, or powerful confederacies which have struggled for their existence and held their ground against all enemies. "Languages," said Prof. Müller, "as we read in the book of Daniel, are the same as nations that dwell on all the earth. If therefore Greeks and Romans, Celts, Germans, Slavs, Persians, and Indians, speaking different languages, and each forming a separate nationality, constitute, as long as we know them, a real historical fact, there is another fact equally real and historical, though we may refer it to a prehistoric period, namely, that there was a time when the ancestors of all these nations and languages formed one compact body, speaking one and the same language, a language so real, so truly historical, that without it there would never have been a real Greek, a real Latin language, never a Greek Republic, never a Roman Empire; there would have been no Sanskrit, no Vedas, no Avesta, no Plato, no Greek New Testament. We know with the same certainty that other nations and languages also, which in historical times stand before us so isolated as Phœnician, Hebrew, Babylonian, and Arabic, presuppose a prehistoric, that is, an antecedent powerful Semitic confederacy, held together by the bonds of a common language, possibly by the same laws and by a belief in the same gods. Unless the ancestors of these nations and languages had once lived and worked together, there would have been no common arsenal from which the leading nations of Semitic history could have taken their armour and their swords, the armour and swords which they wielded in their intellectual struggles, and many of which we are still wielding ourselves in our wars of liberation from error, and our conquests of truth."

With regard to the question as to the exact part of the world where these consolidations took place, no definite or positive statement could be made. Nothing, however, had shaken his belief—he did not call it more—that the oldest home of the Aryas was in the East. All theories in favour of other localities, of which so much had been said lately, whether in favour of Scandinavia, Russia, or Germany, rested on evidence far more precarious than that which was collected by the founders of comparative philology. There was also a difference of opinion as to the original home of the Semites, but all Semitic scholars agreed that it was "somewhere in Asia." With regard to time the difficulties were still greater; but Prof. Müller expressed the opinion that if we must follow the example of geology and fix chronological limits for the growth of the Proto-Aryan language, previous to the consolidation of the six national languages, 10,000 B.C. would by no means be too distant as the probable limit of what he would call our historical knowledge of the existence of Aryan speakers somewhere in Asia. There must also have been a long period previous to the formation of the great Semitic languages, because thus only can the fact be accounted for that on many points so modern a language as Arabic is more primitive than Hebrew, while in other grammatical formations Hebrew is more primitive than Arabic. Whether it was possible that these two linguistic consolidations, the Aryan and Semitic, came originally from a common source was a question which scholars did not like to ask, because they knew it did not admit of a scholarlike answer. Another question also which carried us back still further into unknown antiquity, whether it was possible to account for the origin of languages or rather of human speech in general, was one which scholars eschewed, because it was one to be handled by philosophers rather than by students of language. The deeper we delved the farther the solution of this problem seemed to recede from our grasp; and we might here too learn the old lesson that our mind was not made to grasp beginnings. And yet, though accepting this limitation of their labours as the common fate of all human knowledge, Oriental scholars had not altogether laboured in vain. No history of the world could in future be written without its introductory chapter on the great consolidations of the ancient Aryan and Semitic speakers. It might be said that this great discovery of a whole act in the drama of the world, the very existence of which was unknown to our forefathers, was due to the study of the Science of Language rather than to Oriental scholarship. But where would the Science of Language have been without the students of Sanskrit and Zend, of Hebrew and Arabic? "At a

Congress of Orientalists we have a right to claim what is due to them, and I doubt whether anybody here present would deny that it is due in the first place to Oriental scholars, such as Sir W. Jones, Colebrooke, Schlegel, Bopp, Burnouf, Grimm, and Kuhn, if we now have a whole period added to the history of the world, if we now can prove that long before we know anything of Homeric Greece, of Vedic India, of Persia, Greece, Italy, and all the rest of Europe, there was a real historical community formed by the speakers of Aryan tongues, that they were closely held together by the bonds of a common speech and common thoughts. It is equally due to the industry and genius of Oriental scholars such as de Sacy, Gesenius, Ewald, and my friend the late Prof. Wright, if it can no longer be doubted that the ancestors of the speakers of Babylonian and Assyrian, Syriac, Hebrew, Phœnician, and Arabic formed once one consolidated brotherhood of Semitic speech, and that, however different they are when they appear for the first time in their national individuality on the stage of history, they could once understand their common words and common thoughts, like members of one and the same family. Surely this is an achievement in which Oriental scholarship has a right to take pride, when it is challenged to produce its title to the gratitude of the world at large."

Turning to another field, Prof. Müller showed that Oriental scholars had inspired the oldest period in the history of the world with a new life. Instead of learning by heart the unmeaning names of kings and the dates of their battles, whether in Egypt or Babylon, in Syria or Palestine, we had been enabled, chiefly through the marvellous discoveries of Oriental scholars, to watch their most secret thoughts, to comprehend their motives, to listen to their prayers, to read even their private and confidential letters. The ancient history of the world might be said to have assumed, under the hands of Oriental scholars, the character of a magnificent dramatic trilogy. The first drama told us of the fates of the Aryan and Semitic races, as compact confederacies before their separation into various languages and historical nationalities. The second drama was formed by the wars and conquests of the great Eastern Empires in Egypt, Babylon, and Syria, but it showed us that besides these wars and conquests, there was a constant progress of Eastern culture towards the West, towards the shores and islands of the Mediterranean, and lastly towards Greece. The third drama represented the triumphant progress of Alexander, the Greek far more than the Macedonian, from Europe through Persia, Palestine, Phœnicia, Egypt, Babylon, Hyrcania, and Bactria to India, in fact through all the great empires of the ancient East. Here we saw the first attempt at re-establishing the union between East and the West.

Prof. Müller concluded his address with an eloquent and impressive plea for the encouragement of Oriental studies in England. "When," he said, "I accepted the honourable post of president of this congress, it was chiefly because I hoped that this congress would help to kindle more enthusiasm for Oriental scholarship in England. But that enthusiasm must not be allowed to pass away with our meeting. It should assume a solid and lasting form in the shape of a permanent and powerful association for the advancement of Oriental learning, having its proper home in the Imperial Institute. If the members of this congress and their friends will help to carry out this plan, then our congress might hereafter mark an important epoch in the history of this the greatest Eastern Empire, and I should feel that, in spite of all my shortcomings, I had proved not quite unworthy of the confidence which my friends and fellow-labourers have reposed in me."

A vote of thanks to Prof. Müller for his interesting address was moved by Prof. von Bühler, seconded by Count de Gubernatis, and carried with enthusiasm.

On Tuesday the work of the sections was proceeded with. Special interest was given to the proceedings on Wednesday by the reading of an address written by Mr. Gladstone, for the section dealing with Archaic Greece and the East.

THE ERUPTION AT SANGIR.

ON Friday last the *Times* printed some interesting extracts from a letter (dated Labuan, July 11, 1892) by Mr. George Ormsby, a magistrate in the British North Borneo Company's Service, containing an account of the recent eruption in Sangir, and of a visit paid to the spot immediately afterwards.

Mr. Ormsby left Sandakan on June 4 in the s.s. *Normanby*, and arrived at Menado on the morning of the 7th. After a visit to Govontalo the vessel returned to Menado on the 10th, and here Mr. Ormsby heard that there had been an eruption on some of the islands to the north, and that the s.s. *Hecuba*, which had arrived at Menado just after the *Normanby* had started for Govontalo, had been chartered by the Dutch Government, and had gone out to find the scene of the eruption and to render assistance. On the 12th the *Hecuba* was sighted coming into Menado, and Mr. Ormsby and the skipper of the *Normanby* went on board as soon as she dropped anchor. "The captain," says Mr. Ormsby, "told us that he first went to an island called Siow, as the volcano there was known to be active. He found the island covered with ashes, but was told that the eruption had taken place at Sangir, an island about 30 miles further north. He went on there, and found it buried in ashes; they were digging the houses out at Tarona, the port. The coconut trees were all destroyed, and the loss of life was unknown. The volcano was slightly in eruption when he arrived. He went along the coast, stopping at the villages, and sending rice ashore, as the people were without food. He said some of the people were frightfully burned and maimed."

When the Dutch official who was on board the *Hecuba* reported the state of affairs to the Resident, the *Normanby* was chartered to take rice to the island and land it at Tarona. She left Menado at midnight, and arrived at Tarona next afternoon. "As we steamed up the coast of Sangir we could see the coconuts, with all the leaves broken and hanging downwards and covered with ashes, although the southern end of the island is sheltered from the volcano by hills. The harbour of Tarona is a narrow inlet, about half-way up the western side of the island, with steep hills on each side. The village is on the north side of the harbour, and is sheltered from the volcano by the hills behind it; behind the hills a large plain stretches to the foot of the volcano."

The eruption took place on the 7th at 7 p.m., and there was a slight eruption on the 9th, followed by heavy rain. The only damage done in Tarona was by the weight of ashes; many of the lightly-built native houses were crushed. "The afternoon we arrived," Mr. Ormsby says, "I went ashore, and followed the road from Tarona along the harbour. On rounding the end of the hills the road turned and ran along the northern slope of the hill; down below the road there was a deep ravine, with a small stream at the bottom, which was warm and smelt strongly of sulphur. The ravine was 40 ft. or 50 ft. deep, and had evidently been partly cut out by a stream of mud, which had rushed down it from the foot of the mountain and torn away the road in places. Looking across the ravine towards the crater the whole plain was burnt up, and near the foot of the mountain there was a jet of steam and thick black smoke. On the slope of the crater there was no sign of lava or mud. The three mud rivers I saw started from the foot of the mountain. I followed the road for some distance. About two miles from the sea it crossed a small triangular plain, and then zigzagged up the central range of hills. Where it crossed the plain it was entirely washed away by mud and ashes, which had been hardened by the rain after the eruption. The bridge across the stream was also destroyed, only the butts of the piles remaining. I got up to the top of the hills and a bit down the other side. I had a fine view of the volcano from the top; it was smoking, but there were no fireworks while we were on the island. I noticed a column of steam rising from the plain, close to the foot of the volcano, and determined to try and reach it next morning."

The column of steam was visited next day by Mr. Ormsby and the chief engineer, but they reached it with difficulty. On the way they had to jump a "stream which was steaming, and must have been very hot." He says:—"We went up to where the steam was blowing up through the mud. The mud was quite firm, but so hot that we had to shift from one foot to the other. The steam was puffing up through a lot of holes, but not very strongly where we were. I poked up a lot of stones out of one of the holes with my stick; they were so hot you could not hold them. I let two of them cool a bit, and then rolled them up in my handkerchief and put them in my pocket. One of them was covered with sulphur crystals, but, unfortunately, I lost it as we were returning. The whole place smelt strongly of sulphur, and we soon decided we had had enough of it, as it was about 9 a.m., and between the sun above and the earth below we were both streaming with perspiration. We got back to the ship pretty well fagged, and I stayed on board